

Notice of Allowability

Application No.

10/625,277

Examiner

Thanh Y. Tran

Applicant(s)

DONG-SAUK KIM

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/17/07.
2. ☒ The allowed claim(s) is/are 7-11, 13-17 and 19-29.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Allowable Subject Matter

1. Claims 7-11, 13-17 and 19-29 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record and to the examiner's knowledge does not teach or render obvious, at least to the skilled artisan, the instant invention regarding a semiconductor device comprises a plurality of capacitor plugs are formed within a predetermined interval interleaved between two bit lines; particularly characterized by comprising a plurality of lower electrodes of capacitors; each lower electrode is octagonally or circularly shaped; and a plurality of contact pads are formed between the lower electrodes and the capacitor plugs, wherein the contact pads are formed over the capacitor plugs and disposed at a lower plane of at least one of the paired lower electrodes, as recited in independent claim 7. Claims 8-11, and 25-29 are dependent upon independent claim 7.

The prior art of record and to the examiner's knowledge does not teach or render obvious, at least to the skilled artisan, the instant invention regarding a method for fabricating a semiconductor device, comprises a plurality of capacitor plugs are formed within a predetermined interval interleaved between two bit lines; particularly characterized by comprising a plurality of lower electrodes of capacitors, each lower electrode is octagonally or circularly shaped; depositing a sacrifice insulation layer over the capacitor plug formed over a semiconductor substrate; forming a plurality of open parts exposing the capacitor plugs by performing an selective etching of the sacrifice insulation layer by using a mask pattern; depositing a material for the lower electrode on an entire profile of the semiconductor substrate comprising the open parts; forming the lower electrodes separated from each other by

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performing a planerization process until the sacrifice insulation layer is exposed; and removing the sacrifice insulation layer by carrying out a wet dip-out process, as recited in independent claim 13. Claims 14-17 are dependent upon independent claim 13.

The prior art of record and to the examiner's knowledge does not teach or render obvious, at least to the skilled artisan, the instant invention regarding a method for fabricating a semiconductor device, comprises a plurality of capacitor plugs are formed within a predetermined interval interleaved between two bit lines; particularly characterized by comprising a plurality of lower electrodes of capacitors, each lower electrode is octagonally or circularly shaped; a plurality of contact pads are respectively formed between the lower electrodes and the capacitor plugs after forming the capacitor plugs, wherein the contact pads serve as connecting the lower electrode with the capacitor plug electrically, in independent claim 19. Claims 20-24 are dependent upon independent claim 19.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

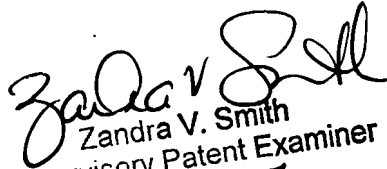
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Y. Tran whose telephone number is (571) 272-2110. The examiner can normally be reached on M-F (9-6:30pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TYT


Zandra V. Smith
Supervisory Patent Examiner
8 June 2007